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SEASONAL CHANGES IN LEVELS OF HORMONES IN THE CATFISH *HETEROPNUESTES FOSSILIS*, IN FOREBRAIN REGIONS DURING DIFFERENT REPRODUCTIVE PHASES

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It is now established that the brain synthesizes steroids *de novo* from cholesterol through mechanisms at least partly independent of peripheral steroidogenic glands. These steroids called neurosteroids accumulate within the brain of several mammals, avian, amphibian and teleost species. The content of these steroids are almost constant even after removal of peripheral steroid sources. In the present study, progestins (pregnenolone, progesterone, and 17-OH-progesterone) and cortisol were measured in hypothalamus and telencephalon brain regions of both male and female catfish *Heteropnuestes fossilis*, throughout their reproductive phases, using ELISA. Our study showed that, the level of pregnenolone, progesterone and 17-OH progesterone decreased significantly from the resting to post-spawning season in both hypothalamus and telencephalon. The levels were highest in forebrain in non-breeding season and lowest in preparatory phase. Cortisol level were highest in forebrain; highest level was observed during preparatory phase in both the sexes. There was significant variation in levels of testosterone and estradiol-17 β level throughout their reproductive cycle. Lowest concentration level was observed in telencephalon during prespawning phase in both the sexes. Thus, present study suggests there catfish brain is involved in biosynthesis of steroids seasonally and these steroids may play important role in regulating brain functions, which can be correlated with reproductive behaviour and brain region-specific functions such as neuroprotection, plasticity and neurogenesis, which need further investigation in the catfish.